

IN THE SPECIFICATION

Please amend the specification as follows. Kindly rewrite the paragraph on page 5, lines 21-37 as follows.

The noil of the invention can be used in the manufacture of any kind of paper or cardboard produced on a paper or cardboard machine. The noil of the invention is especially well suited for use in the manufacture of information paper or cardboard, e.g. in the manufacture of printing paper and copying paper sorts having a grammage of the order of 25 - 350 g/m^2 - g/m^2 , or in the manufacture of graphic cardboard sorts in which the surface later has a grammage of the order of 25 - 350 g/m^2 and the backing or inner layer is any kind of base layer known in the art. The invention is especially applicable in the manufacture of case board, bleached kraft liner or the like. The paper pulp to be used may contain any pulp components, pigments, additives or other substances in known proportions of weight, as is generally known in paper manufacturing industry or in relevant literature.

IN THE CLAIMS

Please amend the claims as follows. The entire set of pending claims is provided below. Please cancel claims 1-10, 15 and 17-19. Please add new claims 20-24. Claims 11-14, 16, and 20-24 are currently pending in the application.

Claims 1-10 (Canceled)

Claim 11. (Currently Amended) ~~Paper~~ The paper pulp as defined in according to claim 40 20, characterised in that wherein the noil fibrils have a size distribution substantially correspond corresponding to a Bauer-McNett wire screen fraction size P100.

Claim 12. (Currently Amended) ~~Paper~~ The paper pulp as defined in according to claim 40 20, characterised in that wherein the paper pulp contains pigment; and the mass ratio of pigment to noil ~~being~~ is between 0.1 – and 20.

Claim 13. (Currently Amended) ~~Paper~~ The paper pulp as defined in according to claim 40 20, characterised in that wherein the noil ~~has been~~ is produced by refining cellulose fibre to a Schopper-Riegler number greater than 80.

Claim 14. (Currently Amended) ~~Paper~~ The paper pulp as defined in according to claim 44 13, characterised in that wherein the cellulose fibre ~~has been~~ is further refined to a Schopper-Riegler number in the range between 85 – and 90.

Claim 15. (Canceled)

Claim 16. (Currently Amended) ~~Paper~~ A paper manufactured using the paper pulp manufacturing method ~~as defined in~~ according to claim 40 21.

Claims 17-19 (Canceled)

Claim 20. (New) A paper pulp, comprising:
at least one of cellulose fibre and mechanical pulp fibre;
filler; and

noil produced from refined cellulose fibre in a range of 0.1 to 15% by weight of the paper pulp, the noil including noil fibrils having a size distribution corresponding to a Bauer-McNett wire screen fraction size P50, wherein the paper pulp is adapted for use in manufacturing at least one of printing paper and graphic cardboard paper.

Claim 21. (New) A method for producing paper pulp adapted for use in manufacturing at least one of printing paper and graphic cardboard paper, the method comprising:

refining cellulose fibre to produce noil comprising noil fibrils having a size distribution corresponding to a Bauer-McNett wire screen fraction size P50; and

mixing filler and the noil with at least one of cellulose fibre and mechanical pulp fibre, such that the noil comprises between 0.1 and 15% by weight of the paper pulp.

Claim 22. (New) The method according to claim 21, further comprising refining cellulose fibre to produce noil comprising noil fibrils having a size distribution corresponding to a Bauer-McNett wire screen fraction size P100.

Claim 23. (New) The method according to claim 21, further comprising refining cellulose fibre to produce noil comprising noil fibrils having a Schopper-Riegler number greater than 80.

Claim 24. (New) The method according to claim 23, further comprising refining cellulose fibre to produce noil comprising noil fibrils having a Schopper-Riegler number between 85 and 90.

REMARKS

Please reconsider the application in light of the above amendments and the following remarks. Please cancel claims 1-10, 15 and 17-19. Please add new claims 20-24. Claims 11-14, 16, and 20-24 are currently pending in the application. No new matter has been added.

The Applicant respectfully requests that at the Examiner's earliest convenience and before any subsequent Office Action is issued that a telephone interview be scheduled and conducted to advance prosecution in the application. The Applicant's representatives look forward to a fruitful discussion of the issues remaining in the instant application and reaching agreement to advance the application to issue.

In paragraphs 1 and 2 on page 2 of the Office Action, the abstract was objected to for being in improper form. The Applicant respectfully traverse the objection but has submitted a new sheet of abstract for incorporation into the application. The Applicant respectfully submits that the objection is now moot and requests that the rejection be withdrawn.

In paragraph 3 on page 2 of the Office Action, the specification was objected to for a minor informality. The Applicant respectfully traverse the objection but has amended the paragraph on page 5, lines 21-37 of the specification. The Applicant respectfully asserts that the objection is now moot and requests that the objection be withdrawn.

In paragraph 4 on page 2 of the Office Action, the amendment filed on 5 August 2002 was objected to for introducing new matter. The Applicant respectfully traverses the objection. Claims 17-19 have been canceled. The Applicant respectfully submits that the objection is now moot in view of the cancellation of claims 17-19 and requests that the objection be withdrawn.

In paragraphs 5 and 6 on page 3 of the Office Action, claims 17-19 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter not described in the specification. The Applicant respectfully traverses the objection. Claims 17-19 have been canceled. The Applicant respectfully submits that the rejection is now moot in view of the cancellation of claims 17-19 and requests that the rejection be withdrawn.

In paragraph 7 and 8 on page 3 of the Office Action, claims 1-16 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Specific rejections however were only directed toward claims 15 and 16. The Applicant respectfully traverses the rejections.

Claims 1-10 and 15 have been canceled and the rejections thereof are asserted to be rendered moot. The Office Action did not set forth any specific limitations designated to be indefinite regarding claims 11-14. Claims 11-14 have been amended and are asserted to comply with 35 U.S.C. § 112, second paragraph.

Claim 16 has also been amended. Claim 16 is a product by process claim dependent from new claim 21 and is therefore submitted to be in proper form and in compliance with 35 U.S.C. § 112, second paragraph. The Applicant requests further instruction and direction in a subsequent telephone interview or Office Action if claim 16 is held to remain deficient.

The Applicant respectfully submits that in light of the cancellation of claims 1-10 and 15 and the amendment of claims 11-14 and 16, that the rejection are rendered moot. The Applicant requests that the rejections under 35 U.S.C. § 112, second paragraph be withdrawn.

In paragraphs 9 and 10 on page 4 of the Office Action, claims 1-19 were rejected under 35 U.S.C. § 102(b) as being anticipated by Gavelin, US Patent 4,889,594 (Gavelin). The Applicant respectfully traverses the rejections. In light of the cancellation of various claims, submission of new independent claims, and amendments to all remaining claims, the Applicant respectfully asserts that the rejections are now moot and should be withdrawn.

However, for the sake of advancing prosecution, the Applicant presents the following arguments setting forth differences between the Applicant's instant claimed invention and the cited references.

Claims 1-10, 15 and 17-19 have been canceled. Currently at issue are new independent claims 20 and 21. Claim 20 sets forth a paper pulp and claim 21 sets forth a method of making paper pulp.

The Applicant sets forth in new claim 20, a paper pulp including, at least one of cellulose fibre and mechanical pulp fibre, filler, and noil produced from refined cellulose

fibre in a range of 0.1 to 15% by weight of the paper pulp. The noil includes noil fibrils having a size distribution corresponding to a Bauer-McNett wire screen fraction size P50. The paper pulp is adapted for use in manufacturing at least one of printing paper and graphic cardboard paper.

The Applicant also sets forth in new independent claim 21, a method for producing paper pulp adapted for use in manufacturing at least one of printing paper and graphic cardboard paper. The method includes refining cellulose fibre to produce noil comprising noil fibrils having a size distribution corresponding to a Bauer-McNett wire screen fraction size P50. The method also includes mixing filler and the noil with at least one of cellulose fibre and mechanical pulp fibre, such that the noil makes up between 0.1 and 15% by weight of the paper pulp.

To anticipate a claim, a reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Therefore, all claim elements, and their limitations, must be found in the prior art reference to maintain a rejection based on 35 U.S.C. §102. The Applicant respectfully submits that Gavelin does not teach every limitation set forth in claims 20 and 21, and therefore fails to anticipate claims 20-21.

A first significant difference between Gavelin and the Applicant's claimed invention is that Gavelin requires retention agents whereas the Applicant's claimed invention does not.

Gavelin teaches a method of manufacturing filler containing papers in which filler and refined fine pulp are mixed and then added to the pulp. The retention and technical properties of the paper are enhanced by coflocculating the filler with fine pulp which contains a high proportion of fine fraction (which passes through 150 mesh Bauer McNett screen) with the aid of retention agents. The best results, from the forming and retention aspect, are obtained by subjecting the flocs generated to a size-controlling shearing process in which large flocs (4-7mm) are broken down and small flocs are

(around 2mm, for example, 0.1-1 mm) are agglomerated. A suitable floc size is 2.5-3.6 mm.

The present invention differs from the Gavelin's method in the size distribution used. All the fractions and floc sizes mentioned by Gavelin would be retained in the Bauer McNett P50 wire screen, rather than passed through the screen. The Office Action admits that Gavelin's particles between 0.5 - 1 mm, described at col. 3, lines 43-66, would be retained by a 50 mesh screen, rather than passed through the screen. Thus, Gavelin does not teach or suggest the elements of the invention as claimed in Applicant's new independent claim 20 and 21, and the use of P50 material would not result simply from a simple optimization process of Gavelin's teaching.

An additional advantage of the present invention is that the noil can be mixed in the paper pulp, i.e. without coflocculating the pigment and noil and subjecting the flocs to a floc size-controlling shearing process. Another advantage of the present invention is that there is no need for retention agents when binding the pigment to noil fibrils: the character of the fibrils is such that pigments and fibrils are "entangled" together without retention agents. Thus the paper according to the invention is easier and cheaper to manufacture.

To further elucidate the differences between Gavelin's method and the present invention, it is useful to consider the differences between the papers produced according to the present invention and that produced using Gavelin's method.

According to Gavelin's example 1, Gavelin's method improves the tensile index from 26.4 to 37.2 kNm/kg, corresponding to an increase in the tensile index of only about 41 %. The method according to the present invention, on the other hand, improves the tensile index from 25 to 40 kNm/kg, corresponding to an increase of 60 %.

Simultaneously the presently claimed paper increases the light-scattering coefficient from 58 to 63 m²/kg, corresponding to an increase of 9%. Gavelin reports no increase in the brightness of the paper. Thus, use of the present invention results in a paper having improved strength and optical properties, while Gavelin's method improves only the strength. Accordingly, Applicant contends that it would not be obvious to modify Gavelin in the manner proposed in the Office Action, to achieve the

results of the claimed invention. Thus, claims 20 and 21 are neither anticipated by nor obvious over Gavelin and are therefore allowable.

Dependent claims 11-14, 16 and 22-24, depend from independent claim 20 and 21, respectively, and may also be considered rejectable under 35 U.S.C. § 102(b) as being unpatentable over Gavelin. While the Applicant does not acquiesce to the anticipated rejections to these dependent claims, it is respectfully asserted that the anticipated rejections are moot in view of the amendments and remarks made in connection with independent claims 20 and 21. The dependent claims include all of the features of the base claims and recite additional features which further distinguish the claims from the cited reference. The Applicant respectfully submits that claims 11-4, 16 and 22-24 are not anticipated by Gavelin and are therefore allowable over the cited reference. The Applicant respectfully requests that the rejections be withdrawn and the application passed to issue.

In paragraphs 11-13 on page 5 of the Office Action, claims 1-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Roberts US Patent 4,692,211 (Roberts). The Applicant respectfully traverses the rejections. In light of the cancellation of various claims, submission of new independent claims, and amendments to all remaining claims, the Applicant respectfully asserts that the rejections are now moot and should be withdrawn.

However, for the sake of advancing prosecution, the Applicant presents the following arguments setting forth differences between the Applicant's instant claimed invention and the cited references.

Claims 1-10, 15 and 17-19 have been canceled. Currently at issue are new independent claims 20 and 21. Claim 20 sets forth a paper pulp and claim 21 sets forth a method of making paper pulp. Claims 20 and 21 have been set forth above.

Three criteria must be met to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference, or combination of references, must teach or suggest all the claim

limitations. MPEP § 2142. The Applicant respectfully traverses the rejection because Roberts fails to disclose all the claim limitations.

A significant initial difference between Roberts and the Applicant's claimed invention is that Roberts discloses kraft paper whereas the Applicant sets forth printing or graphic cardboard paper.

Roberts teaches high strength cellulosic paper in which a refined kraft papermaking pulp is mixed with hydrated cellulosic gel. Roberts fails to disclose the size distribution of noil fibrils in cellulosic gel. The aim of Robert's method is to improve the strength properties of kraft paper; improved optic properties are not disclosed. The Applicant respectfully asserts that it would not be obvious that a paper with both improved strength and improved brightness would be obtained from using P50 material as claimed, and that such improvement in these two different paper properties is unexpected.

Dependent claims 11-14, 16 and 22-24, depend from independent claim 20 and 21, respectively, and may also be considered rejectable under 35 U.S.C. § 103(a) as being unpatentable over Roberts. While the Applicant does not acquiesce to the anticipated rejections to these dependent claims, it is respectfully asserted that the anticipated rejections are moot in view of the amendments and remarks made in connection with independent claims 20 and 21. The dependent claims include all of the features of the base claims and recite additional features which further distinguish the claims from the cited reference. The Applicant respectfully submits that claims 11-4, 16 and 22-24 are neither anticipated by nor obvious over Roberts and are therefore allowable over the cited reference. The Applicant respectfully requests that the rejections be withdrawn and the application passed to issue.

In view of the amendments and reasons provided above, it is asserted that all pending claims are in condition for allowance. The Applicant respectfully requests favorable reconsideration and early allowance of all pending claims.

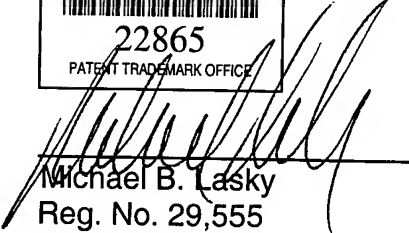
If a telephone conference would be helpful in resolving any issues concerning this communication, please feel free to contact the Applicant's attorney, Michael B. Lasky at (952) 253-4106.

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